SONY

BVM-L/PVM-L Series

TRIMASTER LCD Monitors

Preliminary

TRIMASTER

Full Lineup of BVM-L and PVM-L Series High-Performance LCD Professional Monitors

High-performance BVM-L and PVM-L Series monitors are based on TRIMASTER technology, which itself is founded in Sony's world-leading CRT master monitor technologies developed for the broadcast and professional video production industries.

TRIMASTER technology is a design architecture that's unique to Sony. It achieves three elements essential for critical image monitoring: accurate color reproduction, precise images, and high-quality picture consistency. In developing monitors that exploit this technology, Sony's engineers scrutinized each and every basic specification one by one, and invested creativity without compromise into realizing the highest possible product performance.

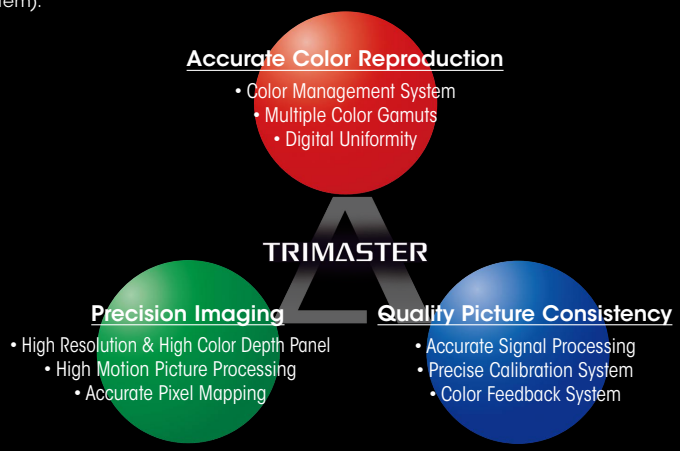
As a result of these extraordinary efforts, TRIMASTER high-performance monitors incorporate a 10-bit drive professional LCD panel, LED backlight system*, and 12-bit output accuracy display engine.

By combining these features with a sophisticated color management algorithm and advanced feedback systems, TRIMASTER monitors emulate color reproduction, image consistency, and image uniformity as accurately as – and often more accurately than – their CRT predecessors.

* The BVM-L Series employs a high-purity LED backlight system (the PVM-L Series employs a wide color gamut CCFL backlight system).

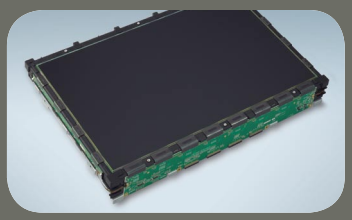
TRIMASTER Technology

TRIMASTER technology is a design architecture used to bring out the full performance capabilities required for evaluation displays. It comprises the core technologies that enable the highest level of color accuracy, precision imaging, and picture-quality consistency.



Three Key Devices Enabling Master Monitor Picture Quality

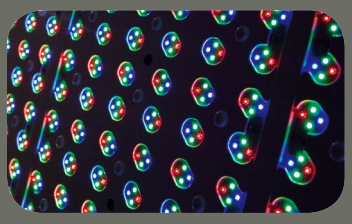
■ Customized LCD Panel – 32-inch*, 23-inch*, and 17-inch* Full HD Resolution



The LCD panels have been developed exclusively for use on the BVM-L and PVM-L Series, respectively, based on strict monitoring criteria. They offer a 10-bit driver and advanced LCD technology that can display high frame rates with a very high-speed response.

* 31.55-inch, 22.5-inch, and 16.52-inch viewable area measured diagonally, respectively.

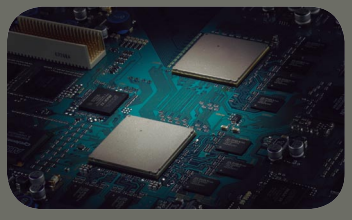
■ Precision Backlight System



Using Sony-designed high-purity LEDs, the precision backlight system is another development used exclusively in the BVM-L Series* master monitors. This enables the widest color gamut ever offered in a Sony monitor and fully covers broadcast-standard color spaces. This precision backlight system also incorporates a uniformity control and a color feedback system.

* the PVM-L Series incorporates wide color gamut CCFL backlight system.

■ Professional Display Engine



The high-precision signal-processing engine has been developed to fulfill master monitor criteria and is optimized for use on the BVM-L Series and the PVM-L Series. This engine incorporates 12-bit output accuracy at each process, and provides a high-quality I/P conversion algorithm and a highly accurate color management system.

BVM-L Series

BVM-L231

BVM-L170

The BVM-L series monitors are reference monitors for critical evaluation in the broadcast and video production industries, and they are measuring instruments that strictly comply with the broadcast standards.

In designing these monitors, the overriding priority was to achieve the full performance capabilities required of master monitors. They therefore comprises the core technologies that enable the highest level of color accuracy, precision imaging, and picture quality consistency.

Development highlights include leading-edge key devices such as a 10-bit drive high-precision LCD panel, a 12-bit output accuracy display engine, and a high-purity LED backlight system that allows a wide color gamut and superb stability.

The hallmark of the BVM-L series is emulation of DCI color gamut* and film features and functions such as S-Log gamma, and 2048 image shift for 2K signal formats.

*The chromaticity of SMPTE RP 431-2-2007 is not completely displayed.

PVM-L Series

PVM-L3200

PVM-L2300

PVM-L1700

The PVM-L Series is the cost-effective high performance monitor series that is optimized for broadcast and video production applications using the same technologies and many features as the BVM-L Series.
As such, it is designed to support a wider range of broadcasting applications than master monitors.

The PVM-L series monitors are based on the same TRIMASTER technology as the BVM-L series , incorporating a 10-bit drive high-precision professional LCD panel, together with a 12-bit output accuracy display engine. With a Wide Color Gamut (WCG) CCFL in the backlight system, customized color filters, and Sony's unique color management system, the PVM-L series monitors cover the color gamut of the three broadcast standards. (SMPTE-C, EBU, and ITU-R BT709).

The choice of panel size - 32-inch*, 23-inch*, and 17-inch* - covers a broad range of applications and needs. For example, these monitors can replace CRT monitors in studios, editing suites, OB trucks, and in the fields.

*Viewable area measured diagonally.

Feature Comparison

	BVM-L Series	PVM-L Series
	BVM-L231 (23")*1 BVM-L170 (17")*1	**PVM-L3200 (32")*1 PVM-L2300 (23")*1 PVM-L1700 (17")*1**
Devices		
10-bit full HD resolution LCD panel	O	O
Backlight	High-purity LEDs	Wide color gamut CCFL
Inputs		
3G/HD/SD-SDI input (four option slots)	O	O
HDMI input	O	O
DVI-D input	O	O
Color gamut and Color temperature		
Color gamut	SMPTE-C, EBU, ITU-R BT.709, **D-Cine***2, BVM-L Native	SMPTE-C, EBU, ITU-R BT.709, PVM-L Native
Color temperature	D65, **D93, D61, D56, D-Cine,** User 1 to 5	D65, D93, User 1 to 5
General features and functions		
Black frame insertion	O **(Backlight blinking)**	O
Interlace display	O	O
Picture & picture	O (Side-by-side, **Wipe, Butterfly, Blending**)	O (Side-by-side only)
Pixel zoom	O	O
HD Frame capture	O	O
Black detail mode	O	O
Aspect correction mode	O	O
+12dB chroma up function	O	O
Marker settings	O	O
Aspect switch	16:9 ⇔ 4:3, **16:9 ⇔ 2.39:1, 1.896:1 ⇔ 2.39:1**	16:9 ⇔ 4:3
Scan switch	O	O
Native scan	O	O
Auto white balance	O	O
Auto Chroma / Phase adjustment	O	O
Internal test signal	O	O
Copy function	O	O
Ethernet-based remote control (BKM-16R)	O	O
EIA 19-inch Rack Mount (6U Height)	O (BVM-L170 only)	O (PVM-L1700 only)
DC operation	O (BVM-L170 only)	O (PVM-L1700 only)
Film features and functions		
Digital cinema 2K (2048 x 1080) formats	**O**	–
2048 Image slide	**O**	–
S-Log gamma	**O**	–
Gamut error display	**O**	–
Film cadence	**O**	–

*1 Viewable area measured diagonally: PVM-L3200: 31.55-inches (801.3 mm)
BVM-L231/PVM-L2300: 22.5-inches (570.6 mm)
BVM-L170/PVM-L1700: 16.52-inches (419 mm)

*2 The chromaticity of SMPTE RP 431-2-2007 is not completely displayed.

Specifications

		BVM-L231	BVM-L170
PICTURE PERFORMANCE			
Type		a-Si TFT Active Matrix LCD	a-Si TFT Active Matrix LCD
Picture Size (Viewable Area)	(H x V)	Approx. 483.8 x 302.4 mm (Approx. 19 1/8 x 12 inches)	Approx. 366 x 206 mm (Approx. 14 1/2 x 8 1/8 inches)
	(Diagonal)	570.6 mm (22 1/2 inches)	Approx. 419 mm (16 1/2 inches)
Aspect		16:10	16:9
Resolution (H x V)		1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels
Pixel Efficiency		99.99 %	99.99 %
Backlight		High-purity LEDs	High-purity LEDs
Preset Brightness		100 cd/m² (D-Cine: 48 cd/m²) (when 100 % white signal is input)	100 cd/m² (D-Cine: 48 cd/m²) (when 100 % white signal is input)
Panel drive		RGB 10 bit	RGB 10 bit
Panel frame rate		96/100/120 Hz	96/100/120 Hz
Viewing angle		85°/85°/85°/85° (typical) (up/down/left/right contrast > 10:1)	85°/85°/85°/85° (typical) (up/down/left/right contrast > 10:1)
INPUT/OUTPUT			
Video Input/Output		Four (4) slots	Four (4) slots
PC Input		DVI-D (x1) (HDCP correspondence)	DVI-D (x1) (HDCP correspondence)
HDMI		HDMI (x1) (HDCP correspondence, Deep color correspondence)	HDMI (x1) (HDCP correspondence, Deep color correspondence)
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 (x1)	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 (x1)
	Parallel Remote	D-sub 9-pin (female) (x1)	D-sub 9-pin (female) (x1)
	Option A	Mini-DIN 8-pin (female) (x1)	Mini-DIN 8-pin (female) (x1)
	Option B	USB (Type A) (x1) (used for future expansion)	USB (Type A) (x1) (used for future expansion)
DC 5V Out		Circle 4-pin (female) (x1)	Circle 4-pin (female) (x1)
GENERAL			
Power Requirements		100 V to 240 V AC, 2.0 to 0.9 A, 50/60 Hz	100 V to 240 V AC, 1.5 A to 0.7 A, 50/60 Hz, or DC 24V to 28V, 5.4 A to 4.6 A
Power consumption		Approx. 180 W (at maximum load, the luminance compensation due to the aged deterioration of the LED is included.)	Approx. 130 W (AC), Approx. 120 W (DC) (at maximum load, the luminance compensation due to the aged deterioration of the LED is included.)
Operating Temperature		0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 20 °C to 30 °C (68 °F to 86 °F))	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 20 °C to 30 °C (68 °F to 86 °F))
Operating Humidity		0 % to 90 % (no condensation)	0 % to 90 % (no condensation)
Operating Pressure		700 hPa to 1060 hPa	700 hPa to 1060 hPa
Storage and Trans. Temperature		-20 °C to +60 °C (-4 °F to +140 °F)	-20 °C to +60 °C (-4 °F to +140 °F)
Storage and Trans. Humidity		0 % to 90 %	0 % to 90 %
Storage and Trans. Pressure		700 hPa to 1060 hPa	700 hPa to 1060 hPa
Dimensions (W x H x D)		565.5 x 436.4 x 243.1 mm (22 3/8 x 17 1/4 x 9 5/8 inches)	436 x 265.8 x 278.6 mm (17 1/4 x 10 1/2 x 11 inches)
Mass		Approx. 21 kg (46 lb 5 oz)	Approx. 14 kg (30 lb 14 oz)
Supplied Accessories		AC power cord (1), AC plug holder (1), Cable holder (1), Bracket (1), Connection Cable for Color Temperature Probe (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)	AC power cord (1), AC plug holder (1), Rack mount bracket (Left, right, each 1), Rack mount attachment screws (6), Connection Cable for Color Temperature Probe (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)

		PVM-L3200	PVM-L2300	PVM-L1700
PICTURE PERFORMANCE				
Type		a-Si TFT Active Matrix LCD	a-Si TFT Active Matrix LCD	a-Si TFT Active Matrix LCD
Picture Size (Viewable Area)	(H x V)	698.4 x 392.85 mm (27 1/2 x 15 1/2 inches)	483.8 x 302.4 mm (19 1/8 x 12 inches)	365.8 x 205.7 mm (14 1/2 x 8 1/8 inches)
	(Diagonal)	801.3 mm (31 5/8 inches)	570.6 mm (22 1/2 inches)	419 mm (16 1/2 inches)
Aspect		16:9	16:10	16:9
Resolution (H x V)		1920 x 1080 pixels	1920 x 1200 pixels (WUXGA)	1920 x 1080 pixels
Pixel Efficiency		99.99%	99.99%	99.99%
Backlight		Wide Color Gamut CCFL	Wide Color Gamut CCFL	Wide Color Gamut CCFL
Preset Brightness		100 cd/m² (when 100 % white signal is input)	100 cd/m² (when 100 % white signal is input)	100 cd/m² (when 100 % white signal is input)
Panel drive		RGB 10 bit	RGB 10 bit	RGB 10 bit
Panel frame rate		96/100/120 Hz	96/100/120 Hz	96/100/120 Hz
Viewing angle		85°/85°/85°/85° (typical) (up/down/left/right contrast > 10:1)	85°/85°/85°/85° (typical) (up/down/left/right contrast > 10:1)	85°/85°/85°/85° (typical) (up/down/left/right contrast > 10:1)
INPUT/OUTPUT				
Video Input/Output		Four (4) slots	Four (4) slots	Four (4) slots
PC Input		DVI-D (x1) (HDCP correspondence)	DVI-D (x1) (HDCP correspondence)	DVI-D (x1) (HDCP correspondence)
HDMI		HDMI (x1) (HDCP correspondence, Deep color correspondence)	HDMI (x1) (HDCP correspondence, Deep color correspondence)	HDMI (x1) (HDCP correspondence, Deep color correspondence)
Control	LAN	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 (x1)	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 (x1)	Ethernet (10 BASE-T/100 BASE-TX), RJ-45 (x1)
	Parallel Remote	D-sub 9-pin (female) (x1)	D-sub 9-pin (female) (x1)	D-sub 9-pin (female) (x1)
	Option A	Mini-DIN 8-pin (female) (x1)	Mini-DIN 8-pin (female) (x1)	Mini-DIN 8-pin (female) (x1)
	Option B	USB (Type A) (x1) (used for future expansion)	USB (Type A) (x1) (used for future expansion)	USB (Type A) (x1) (used for future expansion)
DC 5V Out		Circle 4-pin (female) (x1)	Circle 4-pin (female) (x1)	Circle 4-pin (female) (x1)
GENERAL				
Power Requirements		100 V to 240 V AC, 1.9 A to 0.8 A, 50/60 Hz	100 V to 240 V AC, 1.4 A to 0.6 A, 50/60 Hz	100 V to 240 V AC, 1.2 A to 0.5 A, 50/60 Hz, or DC 24 V to 28 V, 4.6 A to 4.0 A
Power consumption		Approx. 170 W (at maximum load) Approx. 90 W (with 1 x BKM-243HS)	Approx. 140 W (at maximum load) Approx. 80 W (with 1 x BKM-243HS)	Approx. 110 W (AC), Approx. 100 W (DC) (at maximum load) Approx. 90 W (AC), Approx. 80 W (DC) (with 1 x BKM-243HS)
Operating Temperature		0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 20 °C to 30 °C (68 °F to 86 °F))	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 20 °C to 30 °C (68 °F to 86 °F))	0 °C to 35 °C (32 °F to 95 °F) (Recommended operation temperature 20 °C to 30 °C (68 °F to 86 °F))
Operating Humidity		0 % to 90 % (no condensation)	0 % to 90 % (no condensation)	0 % to 90 % (no condensation)
Operating Pressure		700 hPa to 1060 hPa	700 hPa to 1060 hPa	700 hPa to 1060 hPa
Storage and Trans. Temperature		-20 °C to +60 °C (-4 °F to +140 °F)	-20 °C to +60 °C (-4 °F to +140 °F)	-20 °C to +60 °C (-4 °F to +140 °F)
Storage and Trans. Humidity		0 % to 90 %	0 % to 90 %	0 % to 90 %
Storage and Trans. Pressure		700 hPa to 1060 hPa	700 hPa to 1060 hPa	700 hPa to 1060 hPa
Dimensions (W x H x D)		794.0 x 556.7 x 243.1 mm (31 3/8 x 22 x 9 5/8 inches)	565.5 x 435.2 x 243.1 mm (22 3/8 x 17 1/4 x 9 5/8 inches)	436 x 265.8 x 278.6 mm (17 1/4 x 10 1/2 x 11 inches)
Mass		Approx. 27 kg (59 lb 8 oz)	Approx. 16 kg (35 lb 4 oz)	Approx. 11 kg (24 lb 4 oz)
Supplied Accessories		AC power cord (1), AC plug holder (1), Bracket (1), Connection Cable for Color Temperature Probe (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)	AC power cord (1), AC plug holder (1), Bracket (1), Connection cable for color temperature probe (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)	AC power cord (1), AC plug holder (1), Bracket (1), Connection cable for color temperature probe (1), Operation Manual (Japanese, English, each 1), CD-ROM (1), Using the CD-ROM Manual (1)

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MK10642V1IW10JAN

The BVM-L231, BVM-L170, PVM-L3200, PVM-L2300, and PVM-L1700 are produced at Sony EMCS Corporation Inazawa Tec, which has received ISO14001 the Environmental Management system certification.